

CLAIMS

1. A water heater comprising:

a water tank;

a jacket surrounding the tank;

an annular space between the tank and jacket;

a sealing member surrounding an outer surface of the tank and defining the bottom of the annular space, the sealing member including at least one wiper member engaging an inner surface of the jacket, the sealing member also including a flange depending from the at least one wiper member;

a liquid-based insulation applied under pressure within the annular space, the sealing member substantially preventing the insulation from escaping through the bottom of the annular space; and

a fiberglass batt surrounding the tank beneath the sealing member and held against the tank by the depending flange of the sealing member.

2. The water heater of claim 1, wherein the sealing member includes first and second ends that interlock with one another along a non-vertical interface to assist in preventing the insulation from bypassing the sealing member.

3. The water heater of claim 1, wherein the at least one wiper member of the sealing member includes first and second wiper members and a web interconnecting the first and second wiper members.

4. The water heater of claim 3, wherein the web is against the tank and the first and second wiper members extend away from the web and tank in a cantilever fashion.

5. The water heater of claim 3, further comprising a band surrounding the tank, engaging the web, and securing the sealing member to the tank with a compressive force.

6. The water heater of claim 3, wherein the second wiper member is below the first wiper member and wherein the flange depends from the second wiper member and engages the top of the fiberglass batt to restrain the fiberglass bat from leaning away from the tank beyond the end of at least one of the first and second wiper members.

7. The water heater of claim 3, wherein the second wiper member is below the first wiper member and wherein the second wiper member is longer than the first wiper member.

8. The water heater of claim 3, wherein the second wiper member is below the first wiper member and wherein the second wiper member is thicker than the first wiper member.

9. A sealing member for a tank, jacket, and insulating batt assembly, the sealing member defining a bottom end to an annular space between the tank and jacket, the sealing member being adapted to mount to an outer surface of the tank, the sealing member comprising:

at least one arm sealingly engaging an inner surface of the jacket and operable to substantially prevent the foamable insulation from escaping through the bottom of the annular space; and

a flange depending from the at least one arm and operable to hold the top of the insulating batt against the tank and beneath the sealing member.

10. The sealing member of claim 9, wherein the sealing member includes a web and wherein the at least one arm includes first and second arms extending in cantilever fashion away from the web.

11. The sealing member of claim 9, wherein the at least one arm includes first and second arms, wherein the first arm is above the second arm, and wherein the flange depends from the second arm.

12. The sealing member of claim 9, wherein the at least one arm includes first and second arms, wherein the first arm is above the second arm, and wherein the second arm is longer than the first arm.

13. The sealing member of claim 9, wherein the at least one arm includes first and second arms, wherein the first arm is above the second arm, and wherein the second arm is thicker than the first arm.

14. The sealing member of claim 9, further comprising first and second ends that interlock with one another along a non-vertical interface to assist in preventing the foamable insulation from bypassing the sealing member.

15. A water heater comprising:

a water tank;

a jacket surrounding the tank;

an annular space between the tank and jacket;

a sealing member surrounding an outer surface of the tank and defining the bottom of the annular space, the sealing member having first, second, and third wiper members, the second wiper member extending away from the tank further than the first wiper member and the third wiper member extending away from the tank further than the second wiper member, at least the third wiper member engaging an inner surface of the jacket; and

foamable insulation within the annular space, the sealing member substantially preventing the foamable insulation from escaping through the bottom of the annular space.

16. The water heater of claim 15, wherein the first and second arms center the jacket on the water heater and progressively deform the jacket into a substantially circular cross sectional shape as the jacket is lowered over the tank during water heater assembly.

17. The water heater of claim 15, wherein the second arm is thicker than the first arm and the third arm is thicker than the second arm.

18. The water heater of claim 15, wherein the sealing member includes first and second ends that interlock with one another along a non-vertical interface to assist in preventing the foamable insulation from bypassing the sealing member.

19. The water heater of claim 15, wherein the third arm applies a higher seal force against the inner surface of the jacket than either of the first and second arms.

20. A sealing member for defining a bottom end to an annular space between a tank and a jacket surrounding the tank, the sealing member comprising:

a web adapted for mounting on an outer surface of the tank; and

first, second, and third arms extending away from the web;

wherein the first arm is above the second arm, and the second arm is above the third arm;

wherein the second arm extends further away from the web than the first arm, and the third arm extends further away from the web than the second arm; and

wherein at least the third arm is sized to extend across the annular space and engage an inner surface of the jacket.

21. The sealing member of claim 20, wherein the second arm is thicker than the first arm, and wherein the third arm is thicker than the second arm.

22. The sealing member of claim 20, further comprising a flange depending from the third arm and operable to retain the top of an insulating batt against the water tank during installation of the jacket around the tank.

23. The sealing member of claim 20, further comprising first and second ends that interlock with one another along a non-vertical interface to assist in preventing the foamable insulation from bypassing the sealing member.

24. A method for assembling a water heater comprising:

- providing a water tank;
- providing a sealing member having at least one arm and depending flange;
- providing an insulating batt;
- providing a jacket;
- providing a volume of liquid foamable insulation;
- securing the sealing member around the circumference of an outer surface of the water tank;
- wrapping the portion of the water tank below the sealing member with the insulating batt;
- retaining the top of the batt against the water tank with the flange;
- positioning the jacket around the water tank to define an annular space therebetween;
- engaging an inner surface of the jacket with the at least one arm of the sealing member to define the bottom of the annular space;
- introducing the liquid foamable insulation into the annular space; and
- containing the insulation within the annular space with the at least one arm of the sealing member.

25. The method of claim 24, wherein the providing a sealing member step includes extruding the sealing member.

26. The method of claim 25, wherein the providing a sealing member step further includes extruding the sealing member from polyethylene.

27. The method of claim 24, wherein the at least one arm of the sealing member includes first and second arms; wherein the flange depends from the second arm; and wherein the step of securing the sealing member includes positioning the first arm above the second arm.

28. The method of claim 27, wherein the step of providing a sealing member includes making the second arm longer than the first arm; and wherein the step of engaging the inner surface includes engaging the inner surface of the jacket with at least the second arm of the sealing member.

29. The method of claim 27, wherein the step of providing a sealing member includes making the second arm thicker than the first arm.

30. The method of claim 27, wherein the containing the insulation step includes permitting a quantity of the insulation to bypass the first arm and fill a space between the first and second arms, but substantially preventing any insulation from bypassing the second arm.

31. A method of assembling a water heater having a generally cylindrical water tank, and a jacket having a non-circular cross section and adapted to surround the tank, the method comprising the steps of:

providing a sealing member having first, second, and third arms, the third arm being longer than at least one of the first and second arms;

attaching the sealing member to an outer surface of the tank with the first arm above the second arm and the third arm below the second arm;

lowering the jacket around the tank;

engaging the jacket with the first and second arms as the jacket is lowered over the sealing member;

bringing the jacket into a generally circular shape in response to the first and second arms engaging the jacket;

engaging an inner surface of the jacket with the third arm and forming a seal between the third arm and the jacket;

defining an annular space between the tank and jacket and defining a bottom of the annular space with the third arm;

filling the annular space with insulation; and

resisting the escape of insulation through the bottom of the annular space with the sealing member.

32. The method of claim 31, wherein the providing a sealing member step includes extruding the sealing member.

33. The method of claim 32, wherein the providing a sealing member step further includes extruding the sealing member from polyethylene.

34. The method of claim 31, wherein the step of providing a sealing member includes making the third arm thicker than at least one of the first and second arms.

35. The method of claim 31, wherein the resisting the escape step includes permitting a quantity of the insulation to bypass the first and second arms and filling a space between the first and second arms and a space between the second and third arms, but substantially preventing any insulation from bypassing the third arm.